DOCUMENT RESUME

ED 133 144 SE 021 459

AUTHOR	Lorain, Sue; Backman, Judi
TITLE	Ecological Smorgasbord: A Balanced Reading Diet. [Project ECOLogy ELE Pak, Lorain & Backman Pak].
INSTITUTION	Highline Public Schools, Seattle, Wash.
SPONS AGENCY	Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
PUB DATE	[76]
NOTE	40p.; For related documents, see SE 021 438-478; Contains occasional light type
AVAILABLE FROM	Highline Public Schools, Instructional Division, Project ECOLogy ESEA Title III, Bill Guise, Director, 15675 Ambaum Blvd., S.W., Seattle, WA 98166 ($2.50)
EDRS PRICE	MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS	*Ecology; *Elementary Education; *Elementary School Science; *Environment; Environmental Education; *Instructional Materials; *Reading; Units of Study (Subject Fields)
IDENTIFIERS	Elementary Secondary Education Act Title III; ESEA Title III

ABSTRACT

This is one of a series of units for environmental education developed by the Highline Public Schools. This material was basically designed to be used as an individualized reading kit for the intermediate grade student. The books in this kit readily lend themselves to a supplementary reading program as part of a science unit. Depending on a teacher's needs, this kit can be used for a whole class or for selected individuals. For each of approximately 20 books there is a short summary of the book, some possible conference questions for the teacher, and some student activities. (RH)

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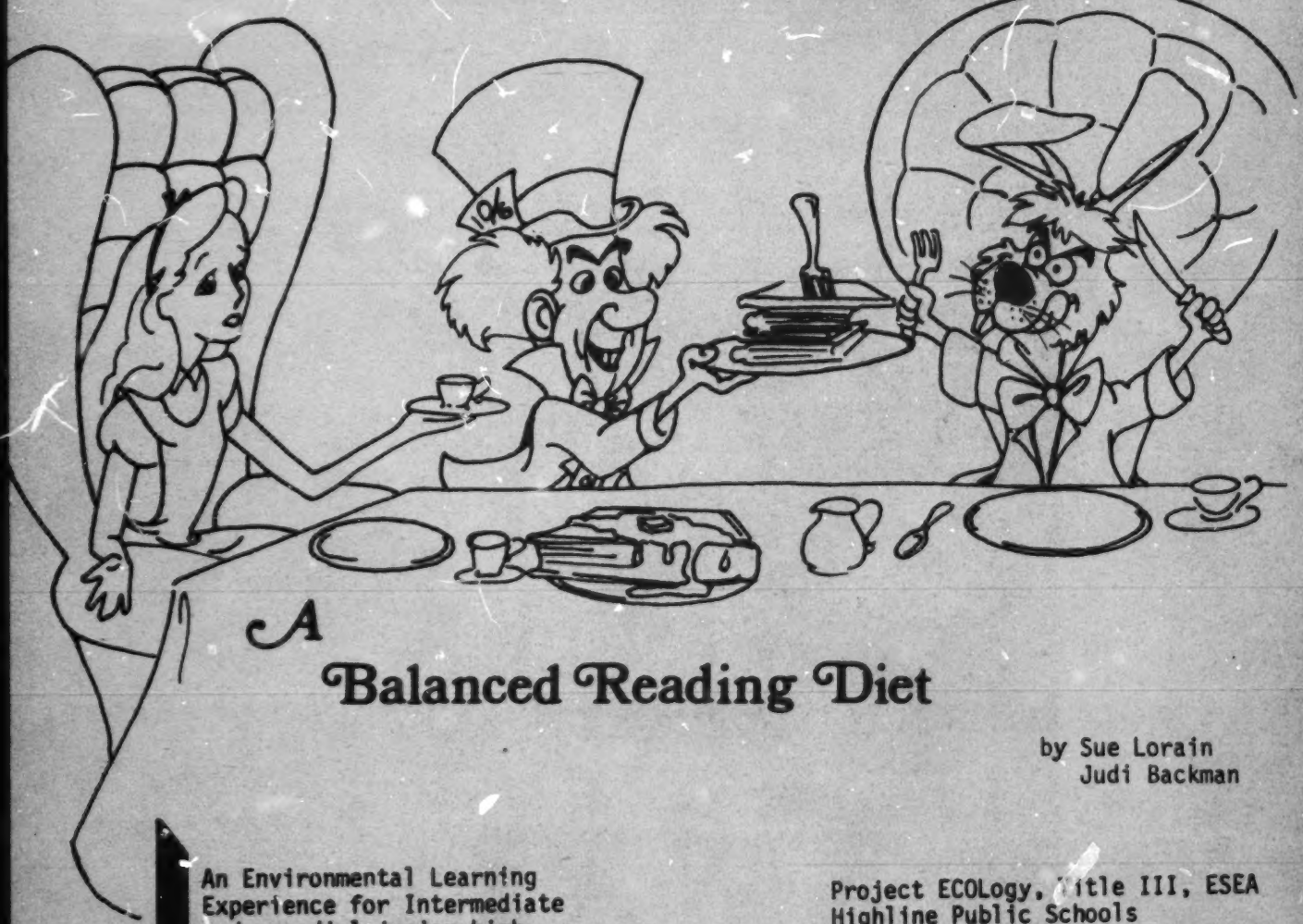
LORAIN & BACKMAN

ECOLOGICAL SMÖRGASBORD:

PAK



A Balanced Reading Diet

by Sue Lorain
Judi Backman

An Environmental Learning Experience for Intermediate and remedial junior high reading. One of many "ELE Paks" available for all areas.

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SE 021 459

NOTES TO TEACHER

PURPOSE: This Pak was basically designed to be used as an individualized reading kit for the intermediate grade student. The nature of the books in this kit readily lend themselves to a supplementary reading program as part of a science unit. In order to get the most value from these books, the student should have prior environmental awareness experiences.

BACKGROUND: The reading and interest levels of the books are varied and have been categorized by reading levels into three groups: Easy, More Difficult, Most Difficult. The scope of subjects in the books is broad but each book is keyed in to the overall area of ecology. For example, the book What Does A Peace Corps Volunteer Do? is a career oriented book, but special care is taken to relate a peace corps volunteer's career to environmental concerns.

USE OF PAK: Included with this Pak is a kit with 20 books. Each book is listed in the Pak in alphabetical order. For any given book there is a short summary of the book and some possible conference questions for the teacher. Many conference questions are judgmental in nature and therefore the answers are not included with the question. It is assumed that the teacher will be able to tell if a student has read a book by the quality of that student's answer to these kinds of questions. However, some conference questions do have a definite answer and in those cases the answers have been outlined for the teacher.

Accompanying each book is a card with some student activities. The activity card includes at least one language arts skill as well as an art activity. A student may wish to do all activities given for a particular book, or a teacher can help the student choose an activity which will enhance individual skills development and fulfill individual needs.

ROOM ORGANIZATION: Depending on a teacher's needs, this kit can be used for a whole class or for selected individuals. It is a supplementary tool. The teacher should order the kit ahead of time and then make corresponding plans for it. Some things to plan around are the physical classroom organization, how the kit will be used, and who will use the kit, accessibility of the kit and the materials needed to complete the student activities, the time for the teacher to plan conferences with the students, and ways in which students can share and/or display their activities.

Some films are listed that the teacher may find as valuable supplements, but are by no means all inclusive. A learning idea is also included.

LIST OF BOOKS FOR PAK

TITLE: ABC's of Ecology
AUTHOR: Isaac Asimov
PUBLISHER: Walker & Co.

TITLE: About Garbage and Stuff
AUTHOR: Ann Zane Shanks
PUBLISHER: The Viking Press

TITLE: The Air We Breathe!
AUTHOR: Enid Bloome
PUBLISHER: Doubleday & Co., Inc.

TITLE: All the Year 'Round
AUTHOR: Fritz Peters
PUBLISHER: The Lion Press

TITLE: Bionics: Man Copies Nature's Machines
AUTHOR: Alvin & Virginia Silverstein
PUBLISHER: The McCall Pub. Co.

TITLE: Chain of Life: A Story of a Forest Food Cycle
AUTHOR: Patricia Collins
PUBLISHER: Doubleday & Co., Inc.

TITLE: Computers
AUTHOR: Jane Jonas Srivastava
PUBLISHER: Thomas Y. Crowell Co.

TITLE: Ecology: The Circle of Life
AUTHOR: Harold R. Hungerford, Ph. D.
PUBLISHER: Childrens Press

TITLE: From Scrolls to Satellites, The Story of Communication
AUTHOR: William Wise
PUBLISHER: Parents' Magazine Press

TITLE: The How & Why Wonder Book of Ecology
AUTHOR: Shelly and Mary Louise Grossman
PUBLISHER: Grosset & Dunlap Pub.

TITLE: Into the Woods - Exploring the Forest Ecosystem
AUTHOR: Laurence Pringle
PUBLISHER: Macmillan Pub. Co., Inc.

TITLE: The Only Earth We Have
AUTHOR: Laurence Pringle
PUBLISHER: Macmillan Co.

TITLE: Recycling - Re-Using Our World's Solid Wastes
AUTHOR: James & Lynn Hahn
PUBLISHER: Franklin Watts, Inc.

TITLE: See Through the Forest
AUTHOR: Millicent Selsam
PUBLISHER: Harper & Row

TITLE: The Sense of Wonder
AUTHOR: Rachel Carson
PUBLISHER: Harper & Row

TITLE: Silver Wolf
AUTHOR: Paige Dixon
PUBLISHER: Atheneum

TITLE: Sound of Sunshine; Sound of Rain
AUTHOR: Florence Parry Heide
PUBLISHER: Parents' Magazine Press

TITLE: What Does a Peace Corp Volunteer Do?
AUTHOR: David Lavine & Ira Mandelbaum
PUBLISHER: Dodd, Mead & Co.

TITLE: The White Palace
AUTHOR: Mary O'Neill
PUBLISHER: Thomas Y. Crowell Co.

TITLE: Who Cares? I Do
AUTHOR: Munro Leaf
PUBLISHER: J. B. Lippincott Co.

Content Reading, Ecology

by Sue Lorain
Judi Backman

Photo Item #	Amt	Description	Publisher
1	1	ABC's of Ecology	Walker & Co.
2	1	About Garbage and Stuff	Viking Press
3	1	All the Year 'Round	Lion Press
4	1	Along Sandy Trails	Viking Press
5	1	Bionics: Man Copies Nature's Machines	McCall
6	1	Chain of Life: A Story of a Forest Food Cycle	Doubleday and Co.
7	1	Computers	Thomas Y. Crowell Co.
8	1	Ecology: Circle of Life	Childrens Press
9	1	Elsa and Her Cubs	Harcourt, Brace & World
10	1	From Scrolls to Satellites	Parents' Mag. Press
11	1	The How and Why Wonder Book of Ecology	Grosset and Dunlap
12	1	Into the Woods - Exploring the Forest Eco System	MacMillian Pub. Co.

Photo Item #	Amt	Description	Publisher
13	1	The Last Trumpeters	Rand McNally
14	1	The Little Woodcock	Charles Scribner's Sons
15	1	The Only Earth We Have	MacMillian Co.
16	1	Recycling - Re-Using our World's Solid Wastes	Franklin Watts
17	1	See Through the Forest	Harper & Row Co.
18	1	The Sense of Wonder	Harper & Row Co.
19	1	Silver Wolf	Atheneum
20	1	S.O.S. Save our Earth	Grosset & Dunlap
21	1	Sound of Sunshine, Sound of Rain	Parents' Magazine
22	1	Thor, the Last of the Sperm Whales	William Morrow & Co.
23	1	What Does an Astronaut Do?	Dodd, Mead & Co.
24	1	What Does a Peace Corp Volunteer Do?	Dodd, Mead & Co.
25	1	What's Inside of Plants?	William Morrow
26	1	The White Palace	Thomas Y. Crowell
27	1	Who Cares? I Do	J.B. Lippincott Co.

BOOKS LISTED ACCORDING TO READING DIFFICULTY

EASY

About Garbage and Stuff
by Ann Zane Shanks

The Air We Breathe
by Enid Bloome

Computers
by Jane Jonas Srivastava

See Through the Forest
by Millicent Selsam

*Sound of Sunshine; Sound of Rain
by Florence Parry Heide

Who Cares? I Do
by Munro Leaf

MORE DIFFICULT

ABC's of Ecology
by Isaac Asimov

All the Year 'Round
by Fritz Peters

Chain of Life: A Story of a Forest
by Patricia Collins

From Scrolls to Satellites: The Story of Communication
by William Wise

Into the Woods: Exploring the Forest Ecosystem
by Laurence Pringle

*Silver Wolf
by Paige Dixon

*Sound of Sunshine; Sound of Rain
by Florence Parry Heide

*The White Palace
by Mary O'Neill

MOST DIFFICULT

Bionics: Man Copies Nature's Machines
by Alvin & Virginia Silverstein

Ecology: The Circle of Life
by Harold R. Hungerford, Ph. D.

The How and Why Wonder Book of Ecology
by Shelly and Mary Louise Grossman

The Only Earth We Have
by Laurence Pringle

Recycling: Re-Using Our World's Solid Wastes
by James & Lynn Hahn

The Sense of Wonder
by Rachel Carson

* Indicates a good read-aloud book.

For your convenience the films used in this ELE are listed on this tear out sheet. Simply add the dates required and mail to the Instructional Material Center, ERAC.

Project ECOLogy

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For your convenience the films used in this ELE are listed on this tear out sheet. Simply add the dates required and mail to the Instructional Material Center, ERAC.

Project ECOLogy

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DEVELOPING A LEARNING CENTER
FOR USE WITH
THIS ENVIRONMENTAL LEARNING EXPERIENCE

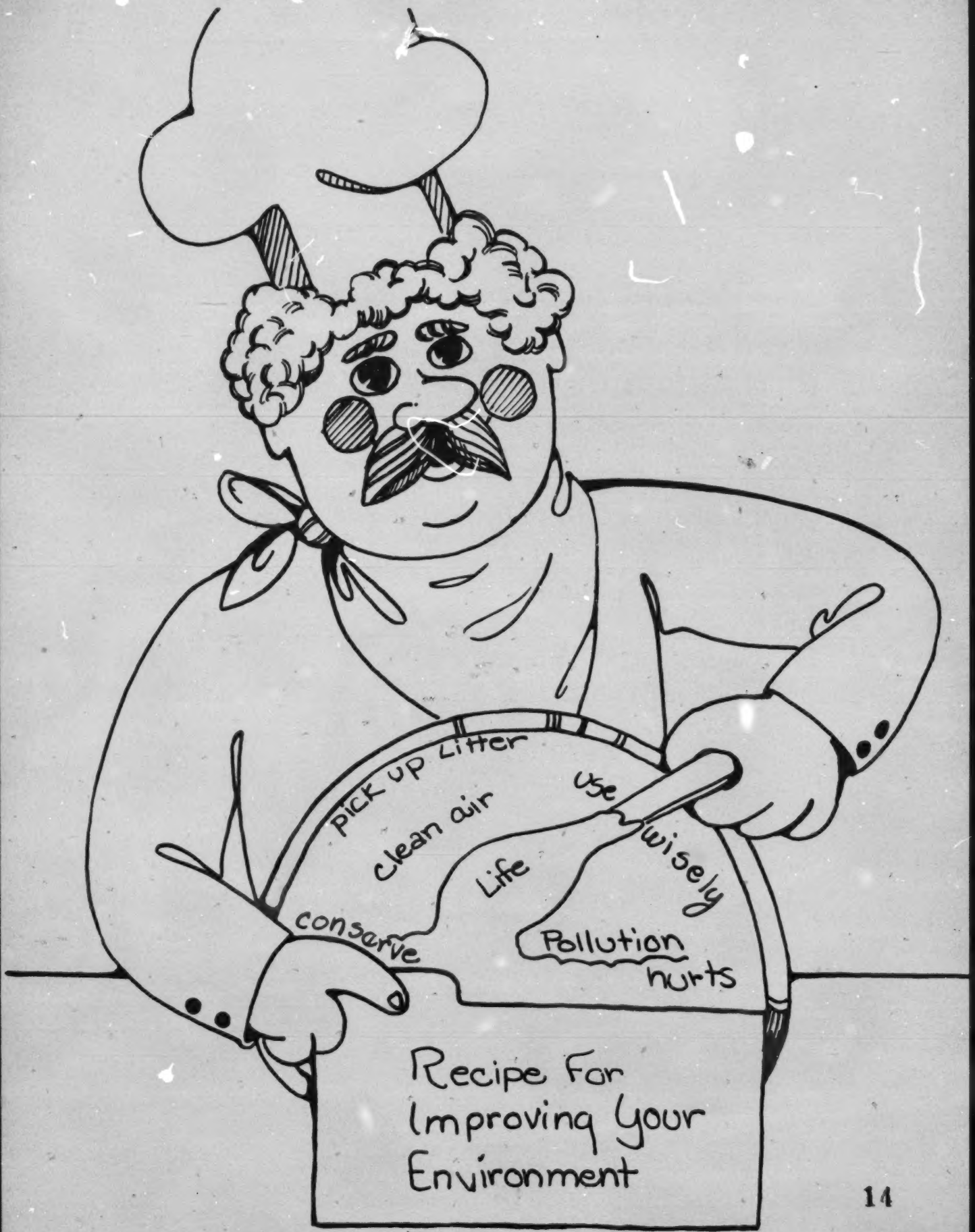
Recipe for Improving Your Environment

Learning Center Plan
"Recipe for Improving Your Environment"

PURPOSE: After completing the center, the student should be aware of environmental problems and ways to help control them.

MATERIALS:
Illustration and title
Activity list (36 x 24 tagboard, individual student copy)
Crayons
Drawing paper
Scissors
Magazines/newspapers
Glue
Paper bags
Litter chart
Litter graph
Package improvement worksheet

PROCEDURE:
1. Place all materials in center.
2. Introduce the center and discuss the activities.
3. Provide time for evaluation for each completed activity and record individual student progress.
4. Display completed activities.


pick up Litter
clean air
use
wisely
Life
conserve
Pollution
hurts
Recipe For
Improving Your
Environment

(Done on 24 x 36 tagboard to display at center; also make a ditto copy for each student so teacher can keep track of progress.)

At this center you can:

1. Take a walking fieldtrip on the school grounds to gather litter and complete a litter chart when you've gathered your litter.

2. Make a litter graph from the litter chart findings.

3. Fill out the litter survey, "Every Litter Bit Hurts".

4. Make up an original cartoon telling about:

    a. air pollution, or
    b. water pollution, or
    c. noise pollution, or
    d. litterbugs

5. Invent a machine that will solve an environmental problem. Draw a picture of your invention and color it. Give it a name.

6. Find some pictures of grocery products in magazines or newspapers. Do "Package Improvement Suggestions Sheet".

7. Make a scrapbook of pollution articles from magazines and newspapers.

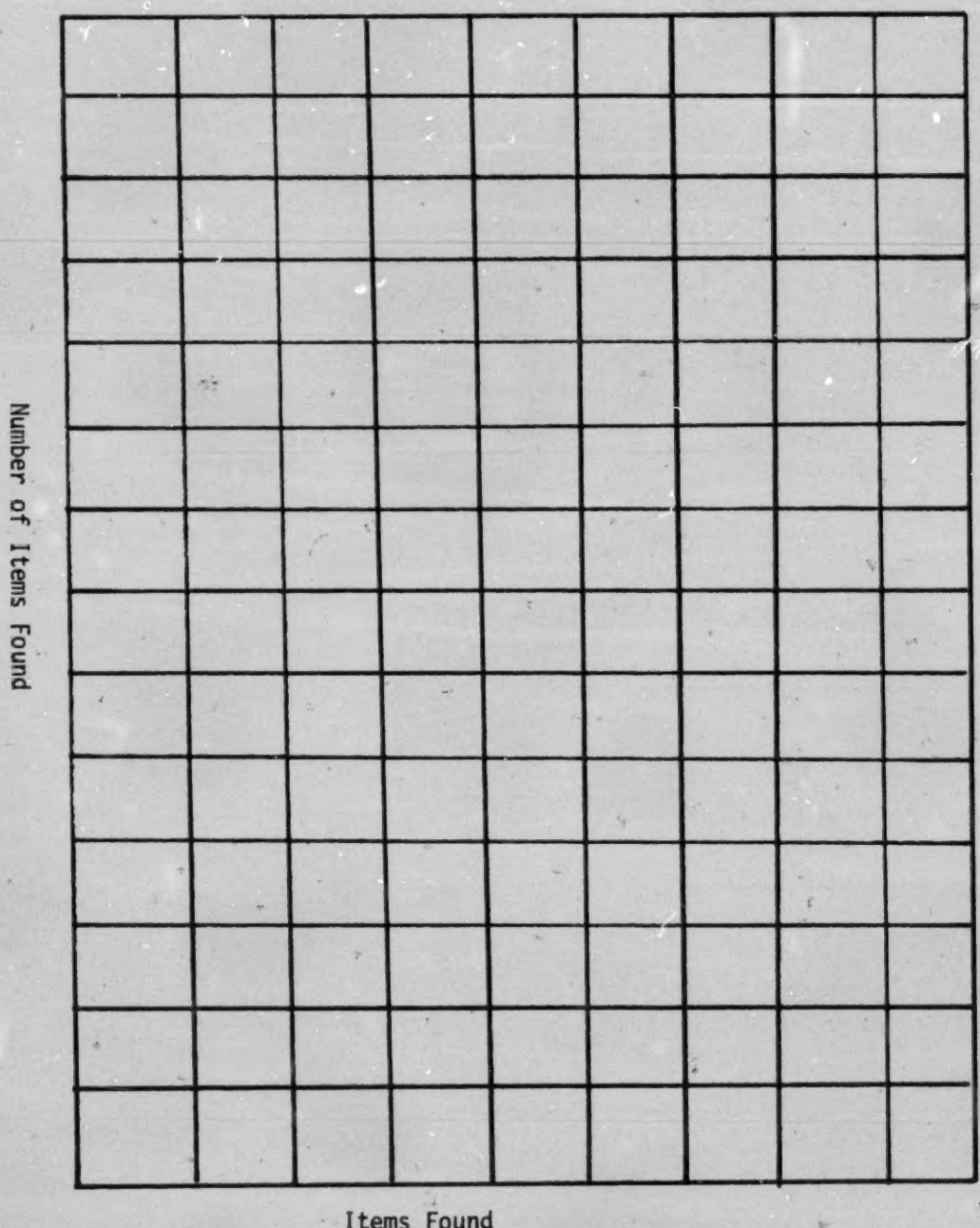
EVERY LITTER BIT HURTS

Items Found	Number of Items Found	Where Items Found	Guilty Persons	Solution

Source: Center Stuff for Nooks, Crannies and Corners

EVERY LITTER BIT HURTS

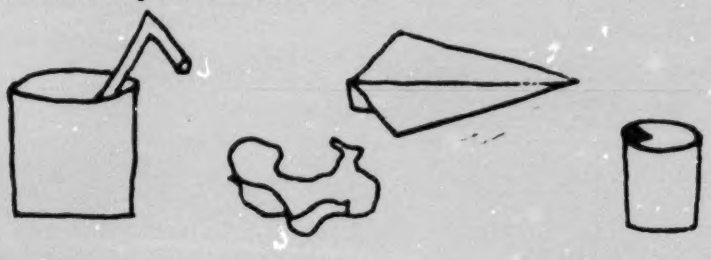
Using information from the chart, make a graph showing the findings of the field trip. Use different colored crayons to graph the results.



SOURCE: Center Stuff for Nooks, Crannies and Corners

EVERY LITTER BIT HURTS

Read each question and check your honest answer.



		Yes	No
1.	Do you leave the water running when you brush your teeth?		
2.	Do you use paper cups and plates?		
3.	Do you drink milk with a straw?		
4.	Do you use colored Kleenex?		
5.	Do you use just one side of your writing paper?		
6.	Do you make one mistake and throw your paper away?		
7.	Do you use scraps of art materials?		
8.	Do you see papers on the floor and leave them?		
9.	Do you ever write on walls, books, floors or bulletin boards?		
10.	Do you break plastic spoons so they can't be reused?		
11.	Do you drink pop from cans?		
12.	Do you use two paper towels rather than one?		
13.	Have you ever thrown anything out a car window?		
14.	Do you waste paper to make paper airplanes?		
15.	Have you ever broken a branch off a tree?		
16.	Do you throw away a pencil that could still be used?		

If you have more than five "yeses", you are guilty of polluting the earth.

List five things you could do to promote ecology.

SOURCE: Center Stuff For Nooks, Crannies and Corners

EVERY LITTER BIT HURTS

Package Improvement Suggestion Sheet

Look at the pictures of the grocery products. Many products have excess packaging that contribute to the waste problem.

How could these products be sold to lessen the amount of packaging?

	Packaging Used	How to Improve It
1.		
2.		
3.		
4.		
5.		

SOURCE: Center Stuff For Nooks, Crannies and Corners

MASTER MATERIALS LIST

These materials should be available to the students at all times and should be easily accessible to them.

scissors

stapler/staples

colored construction paper

lined notebook paper

hole puncher

yarn

brads

crayons

felt pens

magazines - Lots of them

newspapers

glue or paste

tagboard

poster board

string

straws

hangers

wooden rods or sticks, twigs

shoe boxes or other cardboard boxes

unlined newsprint

paper bags

butcher paper

pencils

water colors

tempora paint

old cans

rulers

compass

encyclopedias

dictionary

scraps of cloth

straight pins

graph paper

TITLE: ABC's of Ecology
AUTHOR: Isaac Asimov
PUBLISHER: Walker & Company

SUMMARY: Isaac Asimov clearly defines two ecological terms for each letter of the alphabet. For example food chains, recycling, over population and pollution.

CONFERENCE NOTES:

1. *What are some new words you learned from this book? What do they mean?*
   Possibilities might include:
   - eutrophication - heavy growth of algae and bacteria in a pond or lake into which wastes are poured
   - herbivore - an animal that eats plants
   - inversion - when the upper air is warmer than the lower air
   - mimicry - the way in which one life form imitates another
   - quagmire - soft, wet ground your feet sink into

   There are lots more...

2. *Do the pictures help you understand what the words meant? How?*

ACTIVITIES:

1. Make an alliteration alphabet booklet using either words from the book or your own words about the environment which you found by taking an environmental walk. (Alliteration is the repetition of a beginning sound). Examples of things you might find on an environmental walk:
   - ant
   - building
   - caterpillar
   - dogwood
   - electricity

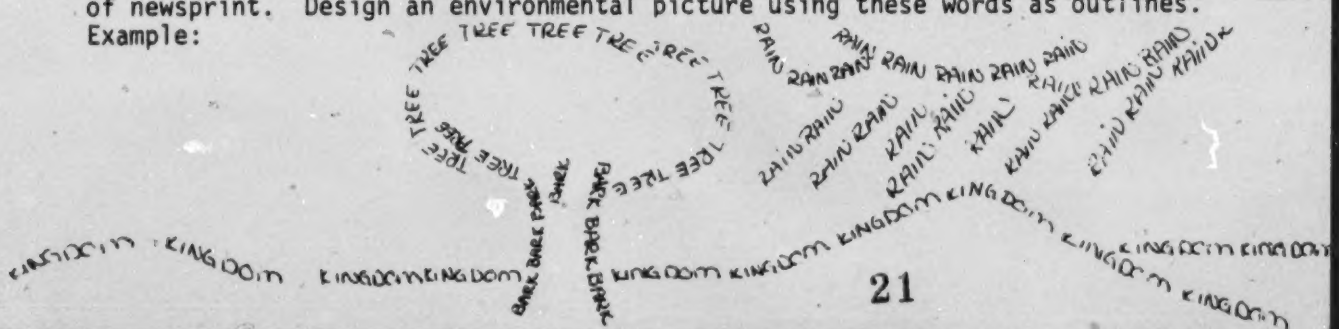
   Now, examples of these in an alliteration alphabet:
   - active angry ants
   - bustling, brick buildings
   - cautious, careful caterpillars
   - dynamic, deciduous dogwood (trees)
   - everflowing, energetic electricity

   and so on. You may even think of a better format. Try it...you might like it.

2. Make an ecology alphabet book for a younger child. Illustrate or find magazine pictures for each word you choose. Remember all the parts of a book including a cover and a title page.

3. Some of these words are pretty broad in meaning. Pick one word and find out more about it. Choose an interesting way to display your findings - chart, poster, mobile, diorama, collage, etc.

4. Choose some words (ten is a good number) and write each word at the top of a piece of newsprint. Design an environmental picture using these words as outlines. Example:



TITLE: The Air We Breathe
AUTHOR: Enid Bloome
PUBLISHER: Doubleday & Co., Inc.

SUMMARY: Have you ever thought about the importance of the air we breathe to the life of man and other animals and plants. This book surveys the ever-increasing problem of air pollution and tells how you as an individual can contribute to the fight for cleaner air.

CONFERENCE NOTES:

1. *What are some harmful effects of air pollution?*
   - people sick
   - damage property
   - harmful to animals and plants

2. *Long ago air pollution was caused by*
   - dust
   - soot
   - forest fires
   - pollen
   - dust storms
   - gases from volcanoes

3. *Today air pollution is caused by*
   - cars
   - garbage
   - factories
   - airplanes

4. *What can you do to improve air pollution?*
   - put litter in trash cans
   - bury leaves and trash
   - help parents make sure...
     - family car is in good condition
     - furnace checked regularly
     - yard kept free of pollen and weeds

ACTIVITIES:

1. Make a scrapbook showing pictures of air pollution.
2. Design a billboard for your neighborhood telling your neighbors how they can help stop air pollution.
3. Write a letter to a city official giving suggestions on how to solve your city's air pollution problem.
4. Keep a diary on your personal involvement in solving air pollution.

TITLE: About Garbage and Stuff
AUTHOR: Ann Zane Shanks
PUBLISHER: The Viking Press

SUMMARY: The MacDonalds discover what happens to their family garbage. Some garbage goes to giant incinerators, to open dumps, to landfills, to empty lots in the city and to rivers and streams. But lots of garbage can be recycled and that's not the end yet!

CONFERENCE NOTES:

1. *Where did the MacDonald's garbage go? Why can't we continue to put garbage in those places?*

2. *What happens to the MacDonald's garbage now? Specifically the bottles, cans and newspapers.*

ACTIVITIES:

1. Develop a family plan of action for making better use of your garbage. Write this plan down, try to follow through with it, and then evaluate the results.

2. Go on a litter scavenger hunt around your playground and collect stuff. Recycle this stuff into something useful. You may invent something new, make a beautiful work of art, etc.

TITLE: All the Year 'Round
AUTHOR: Fritz Peters
PUBLISHER: The Lion Press

SUMMARY: Drawings and poetic prose enlivens a child's view of nature throughout the year. The brook for February, the crocus for March and the grass for April describe its part and place in nature's progress through the year.

CONFERENCE NOTES:

1. *What is your favorite month and what do you like best about it? Do you like the way this book talked about your favorite month? Did it mention things that especially remind you of that month?*

2. *As you read about each month, what did the author choose to tell you? What objects did he use to carry out his messages?*

ACTIVITIES:

1. Make a calendar for this month. Include in your calendar a picture representative of this month as well as the occurrence of important events, past and present. Be creative! Let your mind go...

2. Keeping in mind the sights, smells and your feelings about your favorite month, you write a descriptive poem about that month. Remember: a poem is an expression of inner most thoughts and the best poems don't always rhyme.

TITLE: Bionics: Man Copies Natures Machines
AUTHOR: Alvin and Virginia Silverstein
PUBLISHER: The McCall Publishing Co.

SUMMARY: Bionics is a new branch of science that involves the study of systems in living creatures. The findings of these studies are then applied toward the improvement of man-made systems. In this book, the Silversteins tell the story of what has happened so far in this young and exciting science, covering such diverse topics as sight and sound, navigation and biological clocks, memory and learning, and bioluminescence and bioelectricity.

CONFERENCE NOTES:

1. *What is bionics? Explain it in your own words.* (The study of systems in living creatures and their applications for the improvement of man-made systems.)

2. *What are some of the living systems man can made mechanically?*

3. *What are some living systems man hopes to make?*

ACTIVITIES:

1. Design a robot-type man of the future whose body functions relate to that of a man. Include an illustration of how it will look and write out the plans for how it will function.

2. You have been promoted to chief architect in the planning and development of a new city that will use the science of bionics. How will you incorporate bionics in your city planning? Remember things such as temperature, communication, navigation, defense, transportation, lighting, machinery, etc. Write a blueprint for the construction of your city. Be imaginative!

TITLE: Chain of Life: A Story of a Forest Food Cycle
AUTHOR: Patricia Collins
PUBLISHER: Doubleday & Company, Inc.

SUMMARY: A story about the delicate network of the forest - how the native plants and animals get their food, how plants live on plants, how plants live on animals, how animals live on plants and how animals live on other animals. It is the history of the gigantic food chain that can be found in any forest.

CONFERENCE NOTES:

1. *Suppose you were a rodent in the forest. How would you affect the food chain?*

2. *What do you think a food chain is?*

3. *Did you find anything unusual about the illustrations in the book? Did you like them? Why or why not?*

ACTIVITIES:

1. Suppose you went to the supermarket to get this list of things:

1 qt. of milk	5 lbs. of sugar
1 doz. eggs	1 lb. of margarine
2 lbs. of hamburger	1 loaf of bread
1 box of salt	1 chicken

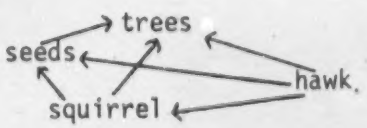
   You have been told to have the groceries put in two bags. One bag is to contain all the items that can be traced back to green plants. The other bag is to contain whatever is left. Which bag would you choose to carry home? Why? (Base your answer on the food chain you read about.)

2. List the things you had for breakfast this morning. Trace the energy flow backward, through all the steps including wrapping and delivery, from each of the things you ate.

3. Consider these things in the forest:

trees	bears	rabbits
seeds (acorn)	moose	field mice
mice	elk	hawk
squirrel	beavers	snake
blossoms	deer	foxes
honeybees	soil	owl
leaves	caterpillar	mountain lion
aphids	robins	raccoon
porcupines		

   Connect those things that work together by using arrows to show the relationship. (Your map may become quite complicated, but think...is the food chain for the world complicated?)
   Example:



TITLE: Computers
AUTHOR: Jane Jonas Srivastava
PUBLISHER: Thomas Y. Crowell Co.

SUMMARY: All about computers from their beginning to their modern day use.

CONFERENCE NOTES:

1. *Have you ever used the services of a computer? If so, in what way?*

2. *What are some ways computers are used today?*

3. *What are some words we associate with the computer and what do they mean?*

   a) unit - part of a computer designed to do a small job
   b) input unit - reads information that is given to the computer
   c) data - information a computer needs to do a job
   d) program - instructions that tell how to use the data
   e) algol, cobol, fortran - computer languages
   f) memory bank - place where the computer keeps programs and data

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ACTIVITIES:

1. Make a flow chart for asking a computer to count from 20 to 30. (see page 22) Give your chart to a friend. Remind him that he is like a computer and can do only what the flow chart tells him to do. Can he count from 20 to 30 using your flow chart?

2. Write a story about "If I had a computer, I would use it for....."

3. Draw a picture to go with your story.

TITLE: Ecology: The Circle of Life
AUTHOR: Harold R. Hungerford, Ph.D.
PUBLISHER: Childrens Press

SUMMARY: Shows various communities from the pond to uncultured man and the succession in each. The last chapter deals with how cultured man produces and changes communities.

CONFERENCE NOTES:

1. *What lesson from the past is an example of how a food chain can be broken. Which link was broken and what were the results.*
   the soil - grass - buffalo - Indian relationship

2. *Compare and contrast the food chain in a forest community and a pond community.*

3. *How does man produce or change communities?*

ACTIVITIES:

1. Using the index in your book, find the pages where topic man is discussed. Write the page numbers down.

2. Use the index to answer these questions:
   a) What is a saguaro?
   b) Who was Francis Bacon?
   c) What does the word commensalism mean?
   d) On what page could you find a picture of a food web? Explain the picture.
   e) What's mans role as part of the ecosystem?

3. Make a collage with a theme of producers, or consumers. Cut pictures and words from magazines to make your collage.

TITLE: From Scrolls to Satellites: The Story of Communication
AUTHOR: William Wise
PUBLISHER: Parents' Magazine Press

SUMMARY: The story of communications; yesterday, today and tomorrow.

CONFERENCE NOTES:

1. *Tell about all the different ways people communicate with each other. Do other things besides people communicate? What are they and how do they do it?*

2. *How did language begin?*

3. *What are some ways people will communicate with each other in the future.*

ACTIVITIES:

1. Develop a system of communication which uses pictures and symbols to represent words and ideas. Begin by compiling a list of the words and ideas you think are most necessary to the language. Develop a picture or symbol for each. Example.

2. Make a timeline tracing the history of communication. (Even though the dates are not given, events should be in chronoligical order.)

3. Write a newspaper article about the invention of the first telephone. (Remember to include the 5 W's: who, what, where, when and why. Does your headline attract attention?)

TITLE: The How and Why Wonder Book of Ecology
AUTHOR: Shelly and Mary Louise Grossman
PUBLISHER: Grosset and Dunlap, Pub.

SUMMARY: Discusses the coastline, forest, grassland, desert, and mountain biomes and some of the natural life and changes that occur in each. It ends with problems and alternatives for maintaining a balanced system in these biomes.

CONFERENCE NOTES:

1. *Describe a food chain.*

nectar ← butterfly ← dragonfly ← bullfrog ← snake ← hawk
(butterfly eats; dragonfly eats; bullfrog eats; snake eats; hawk eats)

2. *What is a biome?* Areas which have different flora and fauna depending on the climate, rainfall, and type of soils.

3. *What are some of the biomes suggested in this book?* forests; grasslands; deserts, hot and cold; mountains; coasts. *Can you briefly describe each?*

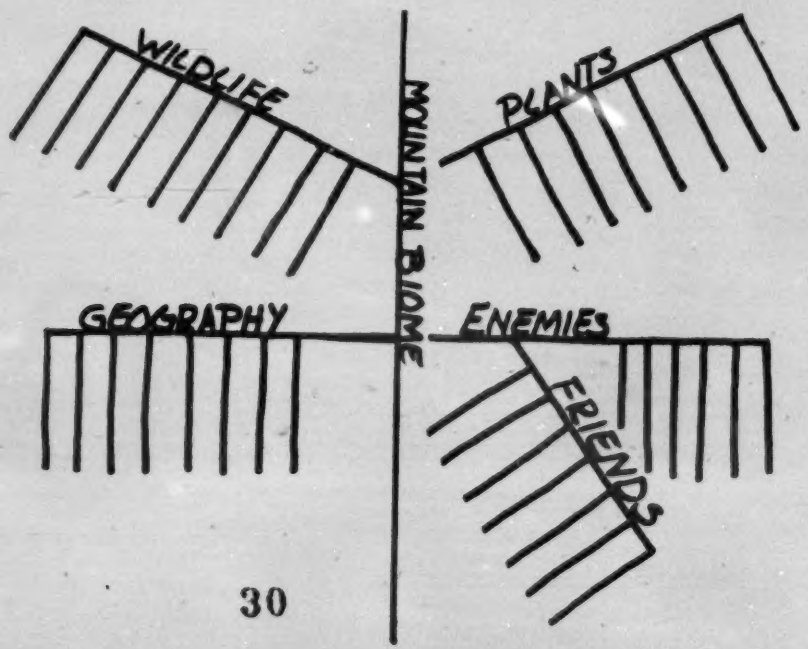
4. *What are a couple of problems that exist in the biomes in the food chains? What are some solutions for these problems?*

ACTIVITIES:

1. Pick out something in the air, earth, or water around you that interests and excites you. Imagine that you've turned into that thing. Write a poem about what it's like.

2. Choose one type of a biome as a theme and draw a mural to illustrate the kinds of living and non-living things you'd find there. (Hint: Do you know what a mural is? There may be some good examples in the encyclopedia!)

3. Devise an outline tree chart for one of the biomes and fill it in. Example.



TITLE: Into the Woods - Exploring the Forest Ecosystem
AUTHOR: Laurence Pringle
PUBLISHER: Macmillan Pub. Co., Inc.

SUMMARY: A forest is described from canopy and understory down to the floor and under the ground - the animals and plants that live in each layer and their part in the forest's energy cycle.

CONFERENCE NOTES:

1. *How is the forest an ecosystem?* It is a place in nature with all of its living and non-living parts.

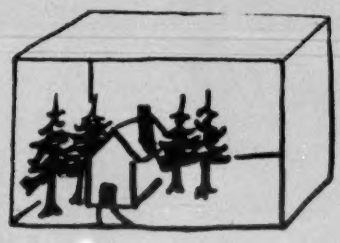
2. *This book talks about 4 layers in the forest. What are these four layers and what are some things in each layer?*
   1. herb layer
   2. shrub layer
   3. understory
   4. canopy

3. *Which layer interests you the most and why?*

4. *How are ideas about forest fires changing? How are ideas about use of the forest changing?*

ACTIVITIES:

1. Construct a miniature stage setting of the forest. (a diorama) Use a cardboard (shoe box), wooden, or metal box and turn it on one side, with open side toward the audience. Discarded materials such as cloth, small mirrors for lakes, etc. can be used for background and props. Tiny toys can be used for special props. For example, the picture on page 42 can be shown by using scraps of cloth, string and toothpicks for tents, actual tree bark for trees, and paper leaves, etc.



   Paint the outer side of your box as well.

2. Choose some words (6 or so) from the glossary and either draw pictures about the word or cut out samples from magazines. Write a sentence using the word in it with each picture you make or cut out.

3. Pretend you are a teacher. What are 5 good questions you could write about this book to make sure someone understands the book? Write the questions and answers you'd suggest as good answers.

TITLE: The Only Earth We Have
AUTHOR: Laurence Pringle
PUBLISHER: Macmillan Co.

SUMMARY: Spaceship Earth is divided into the air, water, the polluters, insects and animals. If greater care is not taken in dealing with these, life aboard Spaceship Earth could come to an end.

CONFERENCE NOTES:

1. *How is the earth itself like a spaceship?*
   a. It's on a journey through space.
   b. Life on earth depends on supplies aboard.

2. *What are some problems we have on our earth today living with nature? With the air we breathe? With our rivers and lakes? Give an example of each.*

3. *What are some solutions you, as an individual, can find to solve these problems?*

ACTIVITIES:

1. Design a positive-negative poster. How? Decide on a way you think our spaceship earth should be (positive) and then think how it is now (negative). Divide a poster-board in half and on one side actually illustrate the negative (a problem) and the other side the positive (your solution).

2. Write a letter to your son and/or daughter of the future. Explain to them what you did as a youth to make it possible for them to continue living on spaceship earth.

3. Devise a chart which presents the following information:
   1. Some areas where pollution is evident.
   2. What the type of pollution is.
   3. What solutions or alternatives can be presented to combat the pollution.

   Make your chart as interesting or creative as you feel or make it as brief and informative as you'd like. Use all your ideas and any ideas. Share your chart with the class.

TITLE: Recycling: Re-Using Our World's Solid Wastes
AUTHOR: James and Lynn Hahn
PUBLISHER: Franklin Watts, Inc.

SUMMARY: Explains recycling, man's need of it, and present and suggested methods of performing the task for reusing waste materials.

CONFERENCE NOTES:

1. *What does the word recycling mean?*
2. *Is it good? Why or why not?*
3. *What are some products that are recycled?*
4. *Pretend you're a glass jar that has just been thrown away. Trace your path from the garbage can to a recycling center and you as a new product.*

ACTIVITIES:

1. You are running for mayor in a small town. An important part of your campaign is the issue of whether it is of value to have recycling stations in your town or not. You believe it is, but how can you convince the voters? Write a plan, a speech, or make a poster to show how you will win the election because of your support on this issue. (Hint: The book has lots of persuasive facts in your favor.)

2. Design a house of the future using only recycled products. Describe and draw your house. (Refer to last chapter for help.)

TITLE: See Through the Forest
AUTHOR: Millicent Selsam
PUBLISHER: Harper & Row Publishers

SUMMARY: From the basement of the forest to its roof there are many kinds of birds, animals and insects. Each lives at the level which is best suited to its own needs of food, protection and climate.

CONFERENCE NOTES:

1. *How does the forest compare to a tall building?*
   a. Leaves = roof
   b. Trees = posts holding up roof
   c. Plants and animals = tenants on different floors
   d. Climate varies from floor to floor

2. *Name some plants and animals and which story you might put them in.*
   Answers will vary.

3. *How would you feel in the forest after the sunsets? Why?*

ACTIVITIES:

1. Pretend you are an architect who has been contracted to make a "house plan of the forest". How many stories would your house have? Who would live on each story? On a large piece of paper, draw your house plan and fill it, story by story, with the things that live there.

2. A. Write the names of at least 5 animals you put in your houseplan.

   B. Now, write down the way that animal uses the forest and how the forest uses it. (Hint: A chart might help you accomplish this.)

TITLE: The Sense of Wonder
AUTHOR: Rachel Carson
PUBLISHER: Harper & Row, Publishers

SUMMARY: This is a journey of discovery which an adult can take to:
The sight of ferns, fungi and silver lichens, periwinkles, ghost crabs, tiny field flowers, migrant birds passing from darkness across the moon.

The sound of storm battering the rocks, the daybreak chorus of the birds, the insect orchestras of August, the roar and whisper of the tide.

The smell of wood smoke, seaweed and salt brine, raindrenched woodlands.

The feel of reindeer moss, sand, spray, wind and rain.

CONFERENCE NOTES:

1. *Share with me the things you liked about this book.*

2. *Do you wish you were in any of the places shown in the picture. If so, where?*

3. *Do you think this book has an environmental message? If so, why?*

ACTIVITIES:

1. What if you had to answer the following questions by someone from another world? Could you help him really gain sense of wonder about what things are really like.
   a) What color is the wind?
   b) How lives in the stone?
   c) Where is the bed of the sunlight?
   d) What is the sound of a blade of grass?
   e) What is the tree unhappy about?
   f) When does the mountain feel small and yellow?
   g) What is the ocean wearing?
   h) If the sunshine is a girl, what is her name?
   i) If a boy, what is his name?
   j) Which comic strip characters live on the sea?

2. Illustrate your answer to one of the above questions?

3. Sometimes writers will compare the way something look to the way something else looks so the reader will understand what is being described. For example: The wheat looked like an ocean of gold gently flowing. Expressions like these are called "similes." A simile uses the words "as" or "like" to make a direct comparison. Choose 8 of your favorite pictures and write a simile for each picture.
   Examples: Page 55 - the stars sparkled like light bulbs across the sky.
   Page 31 - the person was as lonely as a seagull on its first flight
   Page 9 - the ocean was as wild as a caged lion

TITLE: Silver Wolf
AUTHOR: Page Dixon
PUBLISHER: Atheneum

SUMMARY: The wolf is a living creature. And because it is, it has as much right as any other living creature to life. How strong and sure and beautiful that life can be, though full of dangers and deprivations, this story of the early years of a young male wolf makes clear. (Good read-aloud book)

CONFERENCE NOTES:

1. *In growing up, what kind of problems did Silver Wolf encounter?*

2. *Who are the enemies of Silver Wolf? In turn, Silver Wolf is an enemy to whom?*

3. *Did your feelings change about the value of wolves after you read this book? Why or why not?*

4. *Is the wolf an endangered species? Why or why not?*

ACTIVITIES:

1. What facts did you learn from this book about wolves? Write these facts down on a piece of paper.

2. List the words in the story that let you know or picture for yourself how something or someone looks or acts.
   Example: battered car
   raging river
   ragged old man
   ram-shackled house
   Choose one of the words from your list and draw a picture to show how you think the thing looks that the word tells about.

   Try about 10 of these.

3. Write some examples of times when Silver Wolf showed a great deal of courage. In your life, can you think of times or similar incidents when you or someone near you showed courage? When? Write a short story about one of these times.

TITLE: Sound of Sunshine; Sound of Rain
AUTHOR: Florence Parry Heide
PUBLISHER: Parents' Magazine Press

SUMMARY: We experience the world of a young black who lives in the crowded city through sounds and feelings of his blind eyes. (Good Read-Aloud story).

CONFERENCE NOTES:

1. *What did you think of the illustrations in this book? Why?*

2. *Who is Abram and why is he important to the story?*

3. *How does this book make you appreciate those things in your environment that you see? How does it make you more aware of the use of your other senses?*

ACTIVITIES:

1. What do the following words have in common? buzz purr arf splash pop These are examples of onomatopoeia which means a word that imitates a sound associated with an object or action. Make a list of some words that you know that are sound words. Are there any in the book you could add?

   When your list has grown to a good size, choose several words and write a sound poem. Choose a theme and think of all the sound words that relate to your theme. Poem Example:

Introduce	I went on a vacation to the ocean.
theme	I loved to sit in the sand with my eyes closed and listen.
	I heard waves crack, splash and splat.
	I heard seagulls cry.
	While their wings swished over the sand,
Sounds	The driftwood groaned as the tide rolled in
	And the sand scratched against itself.
	It was a sea of noises--bang, whoosh, groan, creak, splash, crash
Ending	I want to go to the ocean next year, too.

2. A. Write a color poem. Choose your favorite color and write your own feelings and images of that color. Be sure to include all five senses - things you hear when you think of that color, things you see, things you feel, things you touch, and things you taste. Write your ideas in poem form.

   B. Draw a picture using only the color you wrote about in your poem. Include the poem as part of your picture or make the two into a booklet.

3. You are a city park planner. What things would you include in your park to make it a happy, natural area for children. Make a map of your park and label each area.

TITLE: What Does a Peace Corp Volunteer Do?
AUTHOR: David Lavine and Ira Mandelbaum
PUBLISHER: Dodd, Mead & Co.

SUMMARY: The achievement and experiences of the thousands of men and women serving around the globe in the Peace Corp make a dramatic story. The narrative text explains the purpose and necessary qualifications, describes the training, and tells of problems encountered. Actual incidents are included.

CONFERENCE NOTES:

1. *What do you think a peace corps volunteer has to do with ecology and our environment?*

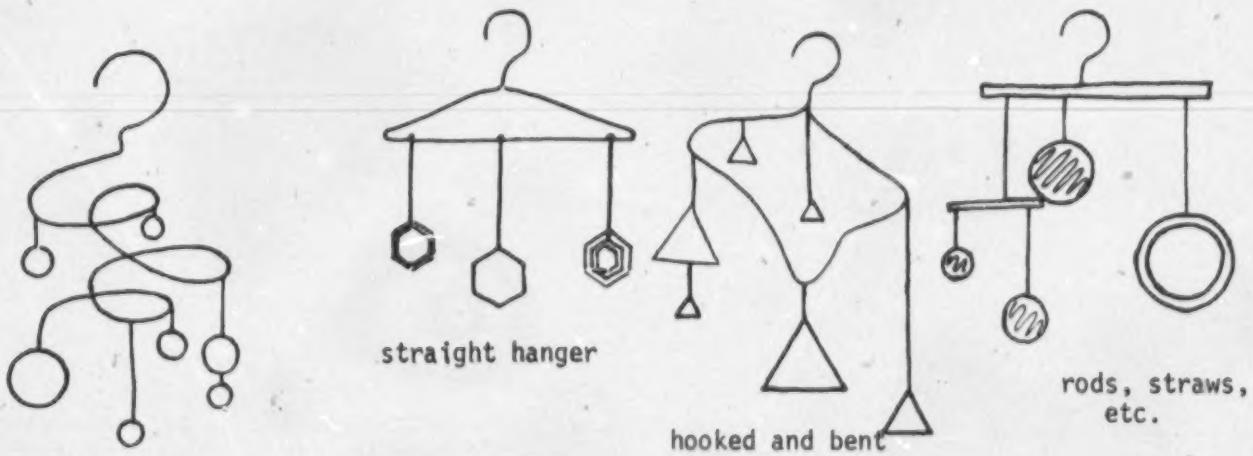
2. *What are some of the actual incidents in the life of a peace corps volunteer that intrigued you? Why?*

3. *What are some of the things a peace corps volunteer does?*

4. *What is a peace corps?*

ACTIVITIES:

1. Make a mobile that summarizes some of the jobs peace corps volunteers fulfill. Use a hanger bent into an unusual shape by unhooking it at the top, or use wooden rods, plastic straws, or straight pieces of wire.
Examples:



2. Make a poster which has a theme of "The Peace Corps Wants You..." Balance your design, and sell the peace corps to prospective volunteers.

3. You're part of an environmental team to evaluate the worth of the peace corps in this area. What arguments will you use for keeping the peace corps? Write down a final speech you might give before a committee of people who will evaluate its worth. Give your speech to the class. Have the class vote as to whether your speech succeeded in convincing them to keep the peace corps as part of the protection of our environment.

TITLE: The White Palace
AUTHOR: Mary O'Neill
PUBLISHER: Thomas Y. Crowell Co.

SUMMARY: The Chinook salmon travels from his high mountain stream to the ocean and then returns to his exact place of birth. The journey is perilous; some dangers are natural to his environment and some are man-made. This life cycle is one of the miracles of all nature. (Good read aloud story)

CONFERENCE NOTES:

1. *If the Chinook salmon's life cycle could be divided into 3 parts, what would you think they might be?*
   a) birth in a stream
   b) journey to the ocean
   c) return to his exact place of birth

2. *What is the white palace?*
   (Basically, a delicate structure formed of the bones of two giant fish. It is on the bottom of a cold stream high in the Blue Mountains and Chinoo, the salmon fingerlings, swims in and out of its corridors.)

3. *What are some things that threaten the life of the salmon?*

4. *Did you like the author's style of writing and the illustrations? Why or why not?*

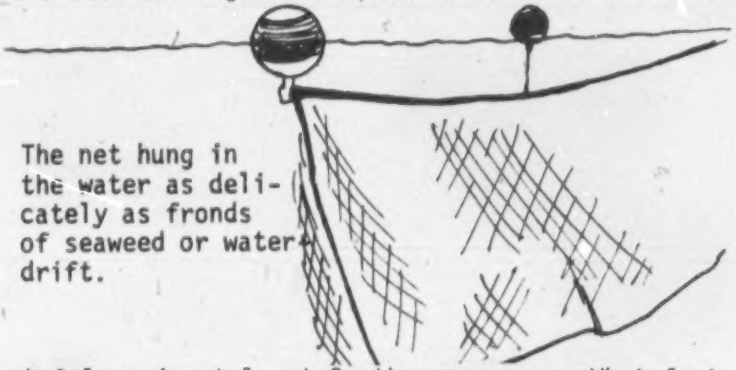
ACTIVITIES:

1. Divide Chinoo's life into 3 parts, his birth, his journey to the ocean, and his return to the mountain stream. Divide a sheet of paper into thirds and label the top of each column with the steps in his life cycle.

BIRTH	Journey to Ocean	RETURN TO BIRTHPLACE

   Now, under each column, write some of the adventures he encounters in each part of his life.

2. This book is full of descriptive words, phrases and sentences. Choose ten or more of your favorite descriptive phrases and write them on a sheet of paper. Then, choose one or two of your very favorites and make an illustration to go with the phrase. (Hint: What art materials might you use to get some unusual effects? Could you combine media such as crayons and paint to achieve a more interesting picture?) Example:



The net hung in the water as delicately as fronds of seaweed or water drift.

3. Read about the Chinook Salmon in at least 2 other sources. What facts did you find in The White Palace that you also found in your further readings.

TITLE: Who Cares? I Do
AUTHOR: Munro Leaf
PUBLISHER: J. B. Lippincott Co.

SUMMARY: Stop! Take a look around you. How are you protecting the environment? or Are you a Spoiler? Dropper? Wrecher?

CONFERENCE NOTES:

1. *Who do you think cares about the environment? What have they done to make you think this?*

2. *Which places have you visited that show signs of misuse?*

3. *What is an example of a spoiler? A wrecker? A dropper?*
   A "spoiler" is someone who ruins things for all of us.
   A "dropper" is one who drops anything anywhere.
   A "wrecker" destroys something some way.

ACTIVITIES:

1. A. Take a walk around the school grounds. Take with you a paper bag in which to collect litter that you find. Examine and classify the litter by making a chart like this.

ITEMS FOUND	NUMBER OF ITEMS FOUND	WHERE ITEMS FOUND	GUILTY PERSON	SOLUTION

B. Using information from your chart make a bar or line graph showing your findings. Use different colored crayons to graph your results. Use graph paper.
Example:

2. Devise a plan of action whereby you can do something good for your environment. Carry your plan out. Write about your plan and tell whether it worked or not.